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AVIATION FORECASTS FISCAL YEARS 1968-1979

Federal Aviation Agency
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AVIATION FORECASTS FISCAL YEARS 1968-1979



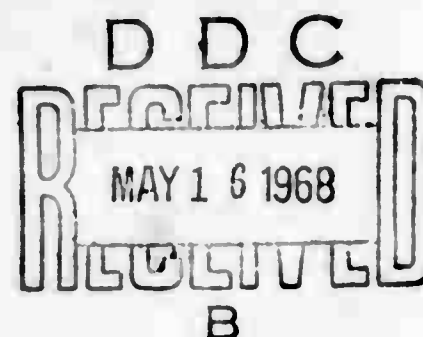
January 1968

Department of Transportation
FEDERAL AVIATION ADMINISTRATION
Office of Policy Development
Economics Division

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FISCAL YEARS
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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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CONTENTS

	<u>Page</u>
INTRODUCTION	1
HIGHLIGHTS OF FISCAL YEAR 1967	2
AVIATION INDUSTRY FORECASTS	
Air Carrier Traffic,	5
Air Carrier Fleet,	8
General Aviation Flying and Aircraft Fleet,	11
Domestic Aviation Fuel Consumption	14
Civil Aircraft and Engine Production,	15
FAA AIR TRAFFIC ACTIVITY FORECASTS --	
Aircraft Operations at Airports with FAA Traffic Control Service,	17
FAA En Route Traffic Control Activity,	19
FAA Flight Services,	20
TABLES	
1. United States Certificated Route Air Carrier Scheduled Passenger Traffic	23
2. Turbine-powered Aircraft on Order by United States Air Carriers	24
3. Total Aircraft in the Service of United States Air Carriers	25
4. Total Revenue Airborne Hours, United States Air Carriers ..	26
5. Total Revenue Statute Miles, United States Air Carriers ...	27
6. Active General Aviation Aircraft by Type of Aircraft	28
7. Active General Aviation Aircraft by FAA Region	29
8. Hours Flown in General Aviation	30

TABLES - Continued

	<u>Page</u>
9. Fuel Consumed by United States Domestic Civil Aviation	31
10. Civil Aircraft Production in the United States	32
11. Civil Aircraft Engine Production in the United States	33
12. Total Itinerant and Local Aircraft Operations at Airports with FAA Traffic Control Service	34
13. Itinerant Aircraft Operations at Airports with FAA Traffic Control Service	35
14. Local Aircraft Operations at Airports with FAA Traffic Control Service	36
15. Instrument Operations at Airports with FAA Traffic Control Service	37
16. Aircraft Handled, IFR Departures, and Overs by User Category - FAA Air Route Traffic Control Centers	38
17. Flight Services, Pilot Briefs, Flight Condition Messages and Flight Plans Originated - FAA Flight Service Stations and Combined Station/Towers,.....	39
18. Aircraft Contacted, FAA Flight Service Stations and Combined Station/Towers	40

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INTRODUCTION

This report presents forecasts of key indicators of aviation activity and of Federal Aviation Administration workload during the period fiscal years 1968-1979. The report has been prepared to meet the planning needs of the various offices and services of FAA for data concerning future trends in aviation activity. During this period significant changes are expected in the volume of air traffic activity and in the type of equipment that will be flying our domestic and international air routes.

Although the report focuses on the period through fiscal year 1974 to provide forecasts required in the preparation of the FAA Five-Year Program, forecasts for fiscal year 1979 have also been prepared to meet long-range planning needs. Specific numerical forecasts have also been included for each year from 1968 to 1974 to meet shorter term, fiscal and program planning requirements. It must be recognized, however, that year-to-year fluctuations are difficult to forecast precisely. To a considerable extent, therefore, the data reflect the trend or average conditions expected during the forecast period. In addition, many published forecasts show a range of values reflecting different assumptions. As an aid to uniform planning, only one forecast is presented herein. However, this forecast should be viewed as a level within a band of possible values - some lower, some higher.

HIGHLIGHTS OF FISCAL YEAR 1967

The major measures of FAA air traffic activity set new all-time highs in fiscal year 1967 and early reports indicate fiscal year 1968 will set even higher records. Trends through the year, however, were mixed. Activity gains during the last half of fiscal year 1967, although at record levels, were not quite as high as during the first half year. The direction of these trends followed the pattern of the over-all trend in the nation's economy.

In fiscal year 1967 the air carriers increased their use of the FAA traffic control system in response to a 13-percent increase in domestic passenger traffic. The latter gain was registered in spite of a 43-day strike covering part of the peak traffic months of July and August 1966. The generally high level of economic activity stimulated the traffic growth as did a significant drop in the average fare level. The latter stemmed mainly from wider use of promotional and discount fares. Traffic in the international area also was up in spite of the airline strike.

General aviation flying reported across the board increases. All FAA workload measures were up as the hours flown increased by 16 percent for the second year in a row. These were by far the largest gains since 1952, the last year of the post-war decline. Instructional flying has shown the largest gain with an advance of over 75 percent in two years, although its future rate is expected to slow down. Because of the basic nature of instructional flying, these past high

growth rates support a step-up in the outlook for other categories of general aviation.

The production of civil aircraft within the United States was at its highest level since the boom years of 1946 and 1947. The large aircraft manufacturers delivered to all civil customers 324 jet transports, an all-time high. Most of these were two- and three-engine models. The U.S. carriers alone added around 200 of these to their fleet as well as about 75 four-engine jets. They also withdrew from service close to 200 piston aircraft, and for the first time the jet fleet outnumbered the piston fleet. From all indications to date, fiscal year 1968 will set another transport production record.

The production of general aviation aircraft in fiscal year 1967 missed the peak of the previous year by only 80 airplanes, 14,799 compared with 14,879. This was the first year since fiscal year 1962 that failed to surpass the previous year. The main reason was the unusually high level of production in fiscal year 1966 when shipments jumped 37 percent above fiscal year 1965, an increase of over 4,000 aircraft. The monthly production trends during fiscal year 1967 showed a letup in the second half compared with the first half. Early reports for fiscal year 1968 show a level about on a par with the preceding six months. It is noteworthy that the production of small jet aircraft dipped between fiscal years 1966 and 1967 from 189 to 104.

Aircraft operations at airports with an FAA tower increased by 16 percent over fiscal year 1966 and the trends into fiscal year 1968

show continued gains but at a slightly lower level. Air carrier operations increased, but most of the rise in fiscal year 1967 was associated with general aviation flying, particularly in local operations. The increase in local operations was undoubtedly related to the sharp rise in instructional flying.

The number of IFR aircraft handled in fiscal year 1967 was 12 percent higher than a year earlier as both the air carrier and general aviation counts were up. Military IFR flying was virtually unchanged from fiscal year 1966. The early months of fiscal year 1968 show a substantial increase in total IFR aircraft handled. Instrument operations were at an all-time high, 13 percent above fiscal year 1966, and fiscal year 1968 promises to be even higher.

Total flight services provided by the FAA rose by 17 percent in fiscal year 1967 as pilot briefs, flight plans originated, and the number of aircraft contacted all increased to new record levels. The early months of 1968 show continued gains, but at a rate slightly below the rise in fiscal year 1967.

AVIATION INDUSTRY FORECASTS

Air Carrier Traffic

Continued high rates of growth in passenger traffic are forecast for both the United States domestic and international air carriers. By fiscal year 1979 the United States airlines are expected to fly a total of 342 billion revenue passenger-miles and 444 million passengers in scheduled domestic and international service. These figures compare with 86 billion revenue passenger-miles and 126 million passengers in fiscal year 1967 (see Table 1). Passenger-mile growth in the U.S. international market will be slightly higher than in the U.S. domestic market.

Traffic in the domestic travel market has nearly doubled in the last four years rising from 35.1 billion passenger-miles in fiscal year 1963 to 65.7 billion in fiscal year 1967. This compares with a modest growth of about 30 percent in the preceding four years. Scheduled passenger-miles flown by the U. S. international air carriers has also shown a near doubling in the last four years, from 10.8 billion to 20.6 billion. However, the comparative growth between fiscal years 1959 and 1963, at over 65 percent, was higher than in the domestic area. The fiscal year 1967 passenger traffic levels in both domestic and international services were affected by the 43-day airline strike during the peak of the travel season. In spite of the strike domestic passenger-miles were up 13 percent and U.S. international passenger-miles were up 11 percent over fiscal year 1966. The major factors behind these

recent high growth rates have been the favorable economic climate, e.g., high gross national product, high disposable income, virtually full employment, plus a declining over-all average fare structure.

This forecast assumes that these factors will continue to exert a positive influence on air carrier traffic volumes. Along with an expected healthy economic environment, the carriers will be improving the quality, comfort, and speed of their services as more jets are added to their fleets and jet service is expanded into virtually all markets.

The domestic passenger traffic forecasts presented herein are consistent with the forecasts that were prepared for the Federal Aviation Administration in connection with its studies and evaluation of the supersonic transport. The essential elements supporting the forecasts are a continuing high rate of growth in the economy as measured by GNP and the assumption that the passenger fare structure will continue to decline. Gross national product is forecast at an average real growth rate of 4.25 percent and average fares are forecast to decline, in real terms, between 2 and 3 percent per year. The projections for fiscal years 1968 and 1969 have been modified from these average rates to reflect a slightly higher growth rate in GNP and slightly higher than average decline in the average fare level resulting from the wider use of discount and promotional fares.

Total domestic passenger-miles are forecast to increase by 22 and 12 percent in fiscal years 1968 and 1969 to 80.2 and 89.5 billion, respectively. The growth rate between fiscal years 1970 and 1979 is expected to be between 10 and 11 percent per year. The average yields have been varied throughout the forecast period in an attempt to reflect the potential for change as new, lower-operating cost aircraft are introduced into service.

The number of domestic passenger enplanements is expected to increase sharply over current levels. In fiscal year 1967, 114 million passengers were enplaned by the domestic scheduled airlines. By fiscal year 1979 this volume is expected to be three and one-half times higher at about 400 million. The average domestic passenger trip was 579 statute miles in fiscal year 1967, up 12 miles over the previous year. In fiscal year 1979 the average trip will be around 645 miles.

The U.S. international passenger traffic forecast was related to the growth in the domestic market and, therefore, reflects many of the same general underlying economic forces. An analysis of past growth trends shows that an unusually consistent relationship has existed between U. S. domestic airline passenger revenue and U.S. international airline passenger revenue. It was assumed this relationship will continue through the forecast period. The passenger-mile estimates also reflect a declining series of passenger-mile revenue

yields which is supported by declining unit costs, more efficient aircraft, and new promotional fares. A separate trend analysis and projection of U.S. international passenger-miles support the forecast.

In fiscal year 1967, the U.S. international carriers transported nearly 13 million passengers for a total of over 20 billion passenger-miles. By fiscal year 1979, these volumes are expected to increase to about 44 million passengers and 84 billion passenger-miles. These carriers have been reporting an ever-increasing average passenger trip length from 1,292 statute miles in 1957 to about 1,600 miles in 1967. This uptrend is expected to continue and reach about 1,900 miles in fiscal year 1979.

Air Carrier Fleet

U.S. air carriers had 1,126 turbine-powered aircraft on order as of November 1967 (see Table 2). This is the highest backlog on record and reflects the generally optimistic outlook the industry has for the years ahead. Of the aircraft on order, one-half are two- or three-engine jets and another 461 are four-engine jets (including freighters and SST's). Only 101 aircraft on order are turboprops, 96 fixed-wing and 5 rotary-wing, with over one-half of the former representing conversions from piston engines. Additional orders for almost all types of jet aircraft can be expected throughout the forecast period. Table 3 shows the U.S. air carrier fleet as forecast by year and includes firm as well as anticipated additional aircraft

orders. Seat-mile productivity estimates were developed for the forecast fleet and tested for reasonableness using the passenger-mile forecast.

Although the fleet includes a quantity of all-cargo aircraft, the number was not based on a detailed study and forecast of the air cargo market. In general, the fleet forecast assumes an evolutionary advance in aircraft technological developments with no major breakthroughs in performance or operating costs. Some V/STOL aircraft may be operating in the air carrier fleet near the end of the forecast period, but it is not possible at this time to identify a particular year or aircraft type. Helicopter service is forecast to continue its steady growth. No major expansion into other metropolitan areas is foreseen, aside from perhaps the Washington-Baltimore complex.

The jet fleet of the U.S. air carriers is expected to double by 1974 and to increase by two and one-half times by 1979 - rising from about 1,324 aircraft as of January 1, 1968, to an estimated 2,696 on January 1, 1974, and to almost 3,300 by the beginning of 1979. The number of two- and three-engine jets will increase substantially throughout the forecast period - from an estimated 628 as of January 1, 1968, to over 1,500 in 1974 and to about 2,000 by 1979. Included in these numbers are "standard" and "stretched" versions of today's models as well as "QC" configurations. By 1969 there will be more two- and three-engine jets in the fleet than any other type. Although no manufacturer

has yet announced firm plans to build a two- or three-engine "jumbo" jet, this forecast anticipates that such an aircraft will be introduced in the early 1970's and will have a capacity of at least 250 seats.

The large four-engine "jumbo" jets are scheduled to enter service in fiscal year 1969. It was assumed these aircraft would continue to be ordered in substantial numbers through 1979 for both passenger and cargo service, and that they will be used initially on the high-density, long-haul passenger routes and gradually replace the current four-engine types on these routes. However, the forecast assumes a continuing demand through this decade for the current four-engine jets in both standard and stretched versions.

It was assumed Concorde service will begin in January 1972 and that initial U.S. SST service will be in January 1975. The forecast of SST's in U.S. air carrier service was based on the present reserved delivery position lists and an assumed production rate of three aircraft per month. Special studies have pointed out the actual number in service will depend upon the SST's relative economics and sonic boom considerations.

A sizeable increase is forecast in the number of one- and two-engine turboprops. In 1967 there were 162 of these aircraft in airline service, 154 two-engine and 8 single-engine. Almost all of the growth to 344 aircraft in 1974 and to 360 aircraft in 1979 will be in the two-engine category. The local service carriers will account for about 80 percent of this fleet. In 1974 about half of this fleet will be made up of aircraft converted from piston to turboprop engines.

The four-engine turboprop aircraft are expected to be retired from the U.S. air carrier fleet in substantial numbers in favor of the more productive two- and three-engine jets. The same will be true for the current fleet of piston aircraft. Most of these aircraft that remain in the fleet will be used by the supplemental carriers.

Forecasts of U.S. air carrier revenue hours and revenue miles flown are shown in Tables 4 and 5. Average utilization rates and airborne speeds by aircraft types by carrier group were developed based on past trends as well as the expected future use of the aircraft. These values were applied to the appropriate projected air carrier aircraft types. In total, both series show steady growth through the forecast period. The hours flown nearly double by fiscal year 1979 while the miles flown more than double. The distributions by aircraft type, however, show quite different growth trends. All types of jet aircraft show substantial gains, while all types of piston aircraft decline to almost insignificant volumes by fiscal year 1979. Within the turboprop group, the gains in the one- and two-engine category are offset by declines in the four-engine category.

General Aviation Flying and Aircraft Fleet

General aviation includes all civil flying except that performed by the interstate and intrastate air carriers operating large aircraft. It embraces a multitude of diverse and growing uses of aircraft ranging from personal flying and transportation of personnel

and cargo by business firms in corporate-owned aircraft to special uses of aircraft, such as crop dusting, power and pipeline patrol, and aerial advertising.

In recent years there has been a strong uptrend in all phases of general aviation activity and the outlook for continued growth throughout the forecast period is extremely favorable. At the beginning of 1967 there were 104,706 active aircraft in the general aviation fleet. This number is expected to increase to 160,000 by 1974 and to 203,000 aircraft by 1979 (see Table 6). Each class of aircraft will increase in number but growth rates will differ according to aircraft type.

Single-engine aircraft, which will continue to make up the great bulk of the fleet, will rise from 88,621 aircraft at the beginning of 1967 to an estimated 130,700 by 1974 and to 163,800 by 1979. Most of these gains will be in the larger four-seat models but increases will also be realized in the two-place types. Multiengine piston aircraft are expected to more than double during the forecast period - from 12,671 in 1967 to approximately 26,500 by 1979. Rotorcraft will also experience significant gains rising to about 4,200 by 1979, but this number will still represent only 2 percent of the total general aviation fleet.

Of special interest is the rise anticipated in turbine-powered general aviation aircraft. At the beginning of 1967 there were 915 aircraft in the active fleet and estimates place their current

number at approximately 1,200. The forecast calls for 3,850 aircraft by 1974 and approximately 7,000 by 1979. Most of these will be powered by turboprop engines, but a considerable number of pure jets is also expected. Conversion of existing piston aircraft to turbine power should account for part of the anticipated growth. Business flying and air taxi operations represent the primary markets for turbine-powered aircraft.

Table 7 provides a regional distribution of active general aviation aircraft. There will be continued growth throughout the forecast period in the number of aircraft in each FAA Region. The most significant rates of growth are expected in the Western and Southern Regions.

Total hours flown in general aviation are expected to increase from an estimated 21.9 million hours in fiscal year 1967 to 31.8 million hours in fiscal year 1974 and to 40.5 million by fiscal year 1979. (see Table 8). Business flying will remain the largest category of general aviation flying and is forecast to account for 12.9 million hours in fiscal year 1979, or approximately 32 percent of the total, as against 7.6 million hours, or 35 percent of the total, in fiscal year 1967. Both scheduled and non scheduled air taxi operations will continue to show marked gains and are expected to become an increasingly important part of the nation's air transportation system in the years ahead. Air taxis will fill a void in air service to small communities

which do not generate sufficient traffic to warrant scheduled air carrier service with large transport-type aircraft. At the same time there will be an increasing demand for air taxi connecting services in major metropolitan areas between air carrier airports and outlying communities. The development of newer, more economical, and higher performance aircraft - some perhaps with short field take-off capability - will help to open these markets. Personal and instructional flying are expected to show higher than average growth rates, stimulated by learn-to-fly programs, rising per capita incomes, and an increasing desire for travel.

Domestic Aviation Fuel Consumption

Compared to 5.4 billion gallons in fiscal year 1967, total fuel consumed in U.S. domestic civil aviation will double by fiscal year 1974 and more than triple by fiscal year 1979. (see Table 9). Jet fuel consumption will account for almost all of the change as users increase consumption from 4.7 billion gallons in fiscal year 1967 to 10.6 and 16.9 billion gallons in fiscal years 1974 and 1979. In fiscal year 1967 the air carriers consumed approximately 97 percent of the jet fuel, and they are expected to maintain this relative percentage throughout the forecast period.

Aviation gasoline consumption is expected to decline from 706 million gallons in fiscal year 1967 to 630 million gallons in

fiscal year 1974 as the air carriers continue to substitute turbine-powered aircraft for piston-powered aircraft. By fiscal year 1979 increases in general aviation gasoline consumption will have offset declines in the air carrier portion and total aviation gasoline consumption is expected to rise and reach 810 million gallons.

Civil Aircraft and Engine Production

In the last several years the production of civil aircraft in the United States has increased sharply and in fiscal year 1967 was at the highest level since the post-war years of 1946 and 1947. Table 10 shows the growth since 1963 and a forecast through fiscal year 1979. General aviation aircraft production, which has doubled since 1963, has accounted for at least 98 percent of the total. Air carrier transport aircraft production at 372 aircraft in fiscal year 1967 was the highest since the beginning of the jet era in 1959.

The forecast for general aviation shows a doubling of production by fiscal year 1979 to a total of about 32,200 units. Approximately 85 percent of this demand will be for single-engine models, 13 percent will be for multiengine piston models, with the remaining 2 percent for turbine-powered aircraft. The trend has been toward aircraft with larger capacity, greater speed, longer range, higher cruising altitude capability, and more electronic equipment. This trend is expected to continue. The demand for turbine-powered aircraft,

although significant by itself, will continue to be a relatively small portion of the total due to high initial and high hourly operating costs plus their complexity of operation as compared with piston aircraft. The actual production levels as forecast in Table 10 may vary due to unpredictable cyclical fluctuations in the general business cycle.

The forecast of air carrier transport aircraft production is based both on announced orders and additional estimated orders for those U.S. and foreign air carriers which will require more aircraft to remain competitive and to keep up with the forecast traffic demand. Most of the future deliveries will be for the two- and three-engine jets although there still will be a demand for present day "standard" and "stretched" four-engine jet models in both passenger and cargo versions. A substantial market is foreseen for large capacity jets in both two- or three-engine versions as well as four-engine models.

The forecast of civil aircraft engine production, as shown in Table 11, was based on the aircraft production figures shown in Table 10 and provides for necessary spares. Piston engine production is based solely on general aviation aircraft requirements, while the numbers of turbojet and turboprop engines account for air carrier requirements as well as general aviation. The relatively low level of turboprop engine production assumes a portion of general aviation aircraft as well as a portion of converted two-engine piston transports will be equipped with foreign-manufactured engines.

65 percent in 1967 and will increase 250 percent during this period from 19.0 million to 66.5 million operations.

Between now and 1979, the U.S. air carriers will increase the size of their fleet by about 1,500 aircraft. Many of the new aircraft will be large capacity jets such as stretched jets, jumbo jets, and the U.S. SST. Despite a substantial increase in the average aircraft size, the carriers will be required to schedule about 140 percent more flights in fiscal year 1979 than in fiscal year 1967 to meet the growing passenger and cargo traffic demand. Total air carrier operations are expected to rise to 20.6 million in fiscal year 1979 compared with 8.6 million in fiscal year 1967.

Military itinerant operations are expected to decline from 1.6 million in 1967 to 1.1 million in 1979, continuing the downtrend which has been evident since the 1957-58 time period.

Local aircraft operations shown in Table 14 will increase from 18.4 million operations in fiscal year 1967 to 79.2 million in 1979, an increase of 330 percent. All of the increase will be accounted for by general aviation since military local operations, as with military itinerant operations, are expected to continue a gradual decline. The growth in general aviation local operations is expected to be from 16.7 million in fiscal year 1967 to 78.0 million in fiscal year 1979.

Instrument operations shown in Table 15 include operations at airports with FAA traffic control service as well as FAA-operated military radar approach control facilities. The forecast shows an increase to 41.7 million instrument operations in 1979 over the 12.1 million in 1967, a gain of 245 percent. Part of this increase will be related to increased air traffic, and part will be due to increased IFR capability anticipated in air carrier and general aviation aircraft operations. The forecast assumes a continuation of present operating rules and procedures. If these are changed, the forecast would have to be adjusted accordingly.

FAA En Route Traffic Control Activity

The number of IFR aircraft handled, which is used to measure en route IFR activity and workload at FAA air route traffic control centers, is forecast in Table 16 to increase from 15.1 million in fiscal year 1967 to 44.6 million in fiscal year 1979. Air carrier aircraft handled, which increased 60 percent in the last four years, has been forecast to increase at an even higher rate. By fiscal year 1971, air carrier aircraft handled are expected to be over 80 percent above the level in fiscal year 1967. By 1979, the number will be around 25.7 million compared to 8.5 million in fiscal year 1967, a gain of over 200 percent. These high rates of growth reflect an increasing proportion of IFR flights as well as a substantial increase in total air carrier flights.

General aviation historically has accounted for a relatively small but rising proportion of en route IFR traffic. The continuing growth and upgrading of the general aviation fleet, particularly as more fully instrumented aircraft enter into service, should result in a significant increase in IFR flying by general aviation. The forecast is for approximately 14.7 million general aviation IFR aircraft handled by fiscal year 1979, a more than sixfold increase over 1967.

Military aircraft handled are expected to rise slightly over the next three-year period to 5.3 million due to military training requirements. However, this peak will gradually recede to 4.5 million by 1979, which is approximately the 1967 level.

All of the aircraft handled forecasts assume the current number of en route traffic control centers and present-day operating rules and procedures. The forecast would have to be modified if any of these elements change.

FAA Flight Services

Tables 17 and 18 show measures of workload and activity at FAA flight service stations and combined station/towers. Total flight services, which is a weighted workload measure consisting of aircraft contacted, flight plans originated, and pilot briefs and flight condition messages, are forecast to increase from 34.0 million in fiscal year 1967 to 97.5 million in fiscal year 1979, assuming no basic change in the flight service system.

Flight plans filed at flight service stations and combined station/towers are forecast to total 12.0 million by fiscal year 1979, compared with 4.8 million in fiscal year 1967. The growth will be about evenly distributed between IFR-DVFR and VFR flight plans.

Pilot briefs and flight condition messages provided by flight service stations numbered 7.6 million in fiscal year 1967 and are forecast to increase to 26.0 million in 1979. This has been and is expected to continue to be the fastest growing service provided by these stations.

Total aircraft contacted are expected to show a continued uptrend and are forecast to increase from 9.3 million in fiscal year 1967 to 20.5 million in fiscal year 1979. The radio contacts between IFR-DVFR aircraft and flight service stations will increase from 1.0 million in fiscal year 1967 to 2.9 million in fiscal year 1979. Radio communication with aircraft flying VFR historically have accounted for about 90 percent of the total aircraft contacted. By fiscal year 1979 this proportion is expected to decline slightly to about 85 percent. However, the number contacted will increase to 17.6 million in fiscal year 1979, compared to 8.3 million in fiscal year 1967, a rise of 112 percent.

General aviation aircraft account for most of the aircraft contacted by FAA flight service stations. In 1967 this category with

7.9 million contacts represented 85 percent of the total. By fiscal year 1979 this percentage is expected to increase to 93 percent as the number of general aviation radio contacts increases to 19.1 million. Air carrier contacts with FAA flight service stations have been very limited. Their need for flight information such as weather is handled largely by their own company radio networks.

Table 1

UNITED STATES CERTIFICATED ROUTE AIR CARRIER
SCHEDULED PASSENGER TRAFFIC

Fiscal Year	Revenue Passenger Enplanements (millions)			Revenue Passenger-miles (billions)		
	Total	Domestic	International	Total	Domestic	International
1963	70.7	63.3	7.4	45.9	35.1	10.8
1964	83.0	74.4	8.6	54.2	41.3	12.9
1965	94.6	84.6	10.0	62.6	47.3	15.3
1966	113.9	102.2	11.7	76.4	57.9	18.5
1967	126.4	113.5	12.9	86.3	65.7	20.6
1968*	153.5	137.3	16.2	106.3	80.2	26.1
1969*	169.4	151.6	17.8	118.7	89.5	29.2
1970*	187.2	167.7	19.5	132.5	100.0	32.5
1971*	205.0	184.0	21.0	146.0	110.0	36.0
1972*	226.0	203.0	23.0	163.0	123.0	40.0
1973*	248.0	222.5	25.5	180.5	136.0	44.5
1974*	272.5	244.5	28.0	200.0	151.0	49.0
1979*	444.0	400.0	44.0	342.0	258.0	84.0
* Forecast.						

Table 2

TURBINE-POWERED AIRCRAFT ON ORDER BY UNITED STATES AIR CARRIERS

Aircraft Type	Aircraft Fleet 6/30/67	Additional Aircraft on Order for Delivery					Total
		1967	1968	1969	1970	1971 or Later	
Total Aircraft	1,568	258	496	188	55	129	1,126
Jet	1,143	194	459	188	55	27	923
2-engine: BAC-111	56	1	2	-	-	-	3
Boeing 737	-	-	88	43	-	-	131
Douglas DC-9	94	55	114	23	-	-	192
FH-228	-	-	-	-	3	-	3
Sud Caravelle	20	-	-	-	-	-	-
Fan Jet Falcon	3	-	-	-	-	-	-
3-engine: Boeing 727	339	58	133	44	-	-	235
4-engine: Boeing 707	284	59	59	17	-	-	135
Boeing 720	131	3	-	-	-	-	3
Boeing 747	-	-	-	22	52	27	101
Convair 880/990	59	-	-	-	-	-	-
Douglas DC-8	157	18	63	39	-	-	120
Turboprop	408	59	37	-	-	-	96
1-engine: Turbo Porter	6	-	-	-	-	-	-
2-engine: F-27/FH-227	100	15	-	-	-	-	15
Convair 580/600	86	38	27	-	-	-	65
DeHav. Twin Otter	1	1	-	-	-	-	1
Grumman G-21T	1	-	-	-	-	-	-
Grumman Gulfstream	1	-	-	-	-	-	-
Nihon YS-11	3	-	10	-	-	-	10
Nord 262	10	-	-	-	-	-	-
Short Skyvan	1	1	-	-	-	-	1
4-engine: A.W.650 Argosy	5	-	-	-	-	-	-
Canadair CL-44	21	-	-	-	-	-	-
Lockheed Electra	126	-	-	-	-	-	-
Lockheed Hercules	6	4	-	-	-	-	4
Vickers Viscount	41	-	-	-	-	-	-
Helicopters	17	5	-	-	-	-	5
1-engine: Bell JetRanger	-	3	-	-	-	-	3
Sikorsky S-62	1	-	-	-	-	-	-
2-engine: Boeing Vertol 107	9	-	-	-	-	-	-
Sikorsky S-61	7	2	-	-	-	-	2
Supersonic Transports	-	-	-	-	-	102	102
Concorde	-	-	-	-	-	38	38
U.S.- SST	-	-	-	-	-	64	64

Note.— Included here are all turbine-powered aircraft on order by United States certificated route, supplemental, intrastate and commercial air carriers to the extent reported by the aircraft manufacturers and air carriers through November 1967. Aircraft on option are excluded. Aircraft leased or to be delivered under a lease agreement are included. Supersonic transport figures relate only to reserved delivery positions.

Table 3

TOTAL AIRCRAFT IN THE SERVICE OF UNITED STATES AIR CARRIERS

(as of January 1)

Aircraft Type	Reported 1967	Forecast							
		1968	1969	1970	1971	1972	1973	1974	1979
<u>Total Aircraft</u>	<u>2,272</u>	<u>2,388</u>	<u>2,583</u>	<u>2,730</u>	<u>2,860</u>	<u>2,990</u>	<u>3,170</u>	<u>3,320</u>	<u>3,860</u>
<u>Fixed-wing Aircraft</u>	<u>2,251</u>	<u>2,366</u>	<u>2,561</u>	<u>2,704</u>	<u>2,834</u>	<u>2,962</u>	<u>3,141</u>	<u>3,290</u>	<u>3,820</u>
<u>Jet</u>	<u>1,006</u>	<u>1,324</u>	<u>1,786</u>	<u>1,987</u>	<u>2,169</u>	<u>2,318</u>	<u>2,522</u>	<u>2,696</u>	<u>3,289</u>
2-and 3-engine	420	628	960	1,091	1,195	1,284	1,421	1,533	2,031
4-engine	586	696	826	896	974	1,034	1,088	1,127	1,155
SST	-	-	-	-	-	-	13	36	103
<u>Turboprop</u>	<u>372</u>	<u>442</u>	<u>407</u>	<u>430</u>	<u>405</u>	<u>404</u>	<u>396</u>	<u>393</u>	<u>380</u>
1-and 2-engine	162	253	310	334	342	341	346	344	360
4-engine	210	189	97	96	63	63	50	49	20
<u>Piston</u>	<u>873</u>	<u>600</u>	<u>368</u>	<u>287</u>	<u>260</u>	<u>240</u>	<u>223</u>	<u>201</u>	<u>151</u>
1-and 2-engine	485	368	229	175	164	160	154	143	121
4-engine	388	232	139	112	96	80	69	58	30
<u>Helicopter</u>	<u>21</u>	<u>22</u>	<u>22</u>	<u>26</u>	<u>26</u>	<u>28</u>	<u>29</u>	<u>30</u>	<u>40</u>
Piston engine	5	5	5	5	5	5	5	5	-
Turbine engine	16	17	17	21	21	23	24	25	40

Note.--Included here are all passenger and cargo aircraft owned or leased by, and in the domestic or international service of the United States certificated route, supplemental, intrastate and commercial air carriers. Aircraft used for training and aircraft that have been withdrawn from service and are awaiting disposal are not included here. Aircraft in the service of air taxi operators are shown in the general aviation aircraft fleet on another page of this report.

Table 4

TOTAL REVENUE AIRBORNE HOURS, UNITED STATES AIR CARRIERS

(In millions)

Aircraft Type	Reported FY 1967	Forecast							
		FY 1968	FY 1969	FY 1970	FY 1971	FY 1972	FY 1973	FY 1974	FY 1979
<u>Total Aircraft</u>	<u>5.20</u>	<u>5.71</u>	<u>6.41</u>	<u>6.89</u>	<u>7.19</u>	<u>7.57</u>	<u>8.10</u>	<u>8.60</u>	<u>9.73</u>
<u>Fixed-wing Aircraft</u>	<u>5.18</u>	<u>5.68</u>	<u>6.38</u>	<u>6.86</u>	<u>7.16</u>	<u>7.53</u>	<u>8.06</u>	<u>8.56</u>	<u>9.67</u>
<u>Jet</u>	<u>3.02</u>	<u>3.91</u>	<u>5.04</u>	<u>5.59</u>	<u>5.97</u>	<u>6.37</u>	<u>6.93</u>	<u>7.46</u>	<u>8.66</u>
2-and 3-engine	<u>1.03</u>	<u>1.57</u>	<u>2.36</u>	<u>2.67</u>	<u>2.90</u>	<u>3.11</u>	<u>3.49</u>	<u>3.79</u>	<u>5.08</u>
4-engine	<u>1.99</u>	<u>2.34</u>	<u>2.68</u>	<u>2.92</u>	<u>3.07</u>	<u>3.26</u>	<u>3.41</u>	<u>3.54</u>	<u>3.24</u>
SST	-	-	-	-	-	-	<u>0.03</u>	<u>0.13</u>	<u>.34</u>
<u>Turboprop</u>	<u>0.84</u>	<u>0.99</u>	<u>0.94</u>	<u>0.98</u>	<u>0.94</u>	<u>0.94</u>	<u>0.93</u>	<u>0.92</u>	<u>0.88</u>
1-and 2-engine	<u>0.38</u>	<u>0.59</u>	<u>0.73</u>	<u>0.79</u>	<u>0.80</u>	<u>0.80</u>	<u>0.82</u>	<u>0.81</u>	<u>0.84</u>
4-engine	<u>0.46</u>	<u>0.40</u>	<u>0.21</u>	<u>0.19</u>	<u>0.14</u>	<u>0.14</u>	<u>0.11</u>	<u>0.11</u>	<u>0.04</u>
<u>Piston</u>	<u>1.32</u>	<u>0.78</u>	<u>0.40</u>	<u>0.29</u>	<u>0.25</u>	<u>0.22</u>	<u>0.20</u>	<u>0.18</u>	<u>0.13</u>
1-and 2-engine	<u>0.77</u>	<u>0.44</u>	<u>0.20</u>	<u>0.12</u>	<u>0.11</u>	<u>0.10</u>	<u>0.10</u>	<u>0.09</u>	<u>0.08</u>
4-engine	<u>0.55</u>	<u>0.34</u>	<u>0.20</u>	<u>0.17</u>	<u>0.14</u>	<u>0.12</u>	<u>0.10</u>	<u>0.09</u>	<u>0.05</u>
<u>Helicopter</u>	<u>0.02</u>	<u>0.03</u>	<u>0.03</u>	<u>0.03</u>	<u>0.03</u>	<u>0.04</u>	<u>0.04</u>	<u>0.04</u>	<u>0.06</u>
Piston engine	*	*	*	*	*	*	*	*	-
Turbine engine	<u>0.02</u>	<u>0.03</u>	<u>0.03</u>	<u>0.03</u>	<u>0.03</u>	<u>0.04</u>	<u>0.04</u>	<u>0.04</u>	<u>0.06</u>

* Less than 0.005.

Note.— Included here are revenue hours flown by all passenger and cargo aircraft that are owned or leased by, and are in the domestic or international service of the United States certificated route, supplemental, intra-state and contract air carriers. Hours for fiscal year 1967 are partially estimated.

Table 5

TOTAL REVENUE STATUTE MILES, UNITED STATES AIR CARRIERS

(In millions)

Aircraft Type	Reported FY 1967	Forecast							
		FY 1968	FY 1969	FY 1970	FY 1971	FY 1972	FY 1973	FY 1974	FY 1979
<u>Total Aircraft</u>	<u>1,865</u>	<u>2,181</u>	<u>2,533</u>	<u>2,743</u>	<u>2,882</u>	<u>3,040</u>	<u>3,280</u>	<u>3,540</u>	<u>4,131</u>
<u>Fixed-wing Aircraft</u>	<u>1,863</u>	<u>2,178</u>	<u>2,530</u>	<u>2,739</u>	<u>2,878</u>	<u>3,036</u>	<u>3,275</u>	<u>3,535</u>	<u>4,124</u>
Jet	1,387	1,775	2,225	2,456	2,615	2,780	3,028	3,295	3,919
2-and 3-engine	421	630	911	1,024	1,099	1,167	1,320	1,423	1,935
4-engine	966	1,145	1,314	1,432	1,516	1,613	1,678	1,738	1,599
SST	-	-	-	-	-	-	30	134	385
Turboprop	215	245	220	222	210	209	205	203	180
1-and 2-engine	83	129	158	164	167	166	169	168	168
4-engine	132	116	62	58	43	43	36	35	12
Piston	261	158	85	61	53	47	42	37	25
1-and 2-engine	131	76	34	20	18	17	17	16	14
4-engine	130	82	51	41	35	30	25	21	11
Helicopter	2	3	3	4	4	4	5	5	7
Piston engine	*	*	*	*	*	*	*	*	-
Turbine engine	2	3	3	4	4	4	5	5	7

* Less than 0.5

Note.—Included here are revenue miles flown by all passenger and cargo aircraft owned or leased by and in the domestic or international service of the United States certificated route, supplemental, intrastate and contract air carriers. Miles for fiscal year 1967 are partially estimated.

Table 6

ACTIVE GENERAL AVIATION AIRCRAFT BY TYPE OF AIRCRAFT

As of January 1	Total	P i s t o n		Turbine	Rotorcraft	Other
		Single-engine	Multiengine			
1963	84,121	73,456	8,978	213	967	507
1964	85,088	73,626	9,458	245	1,171	588
1965	88,742	76,136	10,346	306	1,306	648
1966	95,442	81,134	11,422	574	1,503	809
1967	104,706	88,621	12,671	915	1,622	877
1968*	112,000	94,500	13,600	1,220	1,730	950
1969*	120,000	100,400	15,000	1,600	2,000	1,000
1970*	128,000	106,500	16,250	2,000	2,200	1,050
1971*	136,000	112,600	17,500	2,400°	2,400	1,100
1972*	144,000	118,700	18,750	2,800	2,600	1,150
1973*	152,000	124,700	20,000	3,300	2,800	1,200
1974*	160,000	130,700	21,200	3,850	3,000	1,250
1979*	203,000	163,800	26,500	7,000	4,200	1,500

*Forecast.

Table 7

ACTIVE GENERAL AVIATION AIRCRAFT BY FAA REGION

As of January 1	Total	FAA REGION					
		Eastern	Southern	Southwest	Central	Western	Pacific
1963	84,121	17,592	9,015	12,551	23,437	19,837	1,525
1964	85,088	17,629	9,439	12,556	23,590	20,218	1,488
1965	88,742	18,275	10,032	12,985	24,464	21,304	1,476
1966	95,442	20,159	11,110	13,964	25,741	22,661	1,600
1967	104,706	22,514	12,562	15,063	27,691	24,930	1,717
1968*	112,000	23,450	13,700	16,100	29,500	27,200	1,810
1969*	120,000	24,900	14,900	17,100	31,450	29,550	1,890
1970*	128,000	26,200	16,200	18,100	33,250	32,050	1,970
1971*	136,000	27,500	17,600	19,200	35,100	34,300	2,050
1972*	144,000	28,800	19,000	20,300	37,000	36,500	2,150
1973*	152,000	30,200	20,300	21,300	38,800	38,900	2,250
1974*	160,000	31,500	22,000	22,600	40,100	41,200	2,350
1979*	203,000	38,100	31,200	26,500	48,700	55,000	3,075

* Forecast.

Note.—Totals include a small number of aircraft located in foreign countries.

Table 8
HOURS FLOWN IN GENERAL AVIATION
(In millions)

Fiscal Year	Total	Business	Commercial	Instructional	Personal	Other
1963	14.8	5.6	3.2	2.4	3.5	0.1
1964	15.4	5.7	3.2	2.6	3.7	0.2
1965	16.2	5.8	3.3	3.0	3.9	0.2
1966	18.9	6.5	3.4	4.5	4.3	0.2
1967**	21.9	7.6	3.9	5.3	4.9	0.2
1968*	23.2	8.0	4.1	5.4	5.5	0.2
1969*	24.4	8.4	4.3	5.5	6.0	0.2
1970*	25.9	8.8	4.7	5.6	6.6	0.2
1971*	27.3	9.2	5.0	5.7	7.2	0.2
1972*	28.8	9.6	5.3	5.9	7.8	0.2
1973*	30.4	10.0	5.7	6.1	8.3	0.3
1974*	31.8	10.4	6.1	6.3	8.7	0.3
1979*	40.5	12.9	8.1	8.2	10.9	0.4

*Forecast.

**Preliminary.

Note.—Hours for 1963-1966 have been developed from calendar year data shown in FAA Statistical Handbook of Aviation.

Table 9

FUEL CONSUMED BY UNITED STATES DOMESTIC CIVIL AVIATION

(In millions of gallons)

Fiscal Year	Jet Fuel			Aviation Gasoline			Total Jet Fuel And Aviation Gasoline
	Air Carrier <u>1/</u>	General Aviation <u>2/</u>	Total	Air Carrier <u>1/</u>	General Aviation <u>2/</u>	Total	
1963	2,250	25	2,275	635	245	880	3,155
1964	2,561	36	2,597	615	255	870	3,467
1965	3,058	61	3,119	557	277	834	3,953
1966	3,907	109	4,016	464	333	797	4,813
1967	4,568	129	4,697	335	371	706	5,403
1968*	5,560	150	5,710	190	415	605	6,315
1969*	6,840	175	7,015	100	440	540	7,555
1970*	7,470	195	7,665	70	470	540	8,205
1971*	8,010	210	8,220	60	500	560	8,780
1972*	8,620	225	8,845	60	530	590	9,435
1973*	9,500	240	9,740	50	560	610	10,350
1974*	10,350	265	10,615	40	590	630	11,245
1979*	16,450	440	16,890	30	780	810	17,700

*Forecast.

1/ Partially estimated for fiscal years 1963-1967.2/ Estimated for fiscal years 1963-1967; actual fuel consumption by general aviation aircraft is not reported.

Note.—Domestic civil aviation is defined for purposes of this table to include all civil aircraft flights which originate and terminate within the 48 conterminous states, within Hawaii and within Alaska. Fuels consumed by airframe and aircraft engine manufacturers, whether for flight testing or ground testing, are not shown here because they are not available for the domestic industry as a whole and cannot be estimated with any assurance of accuracy. Estimates of fuel consumed by the supplemental, contract and intrastate air carriers are included in the "Air Carrier" columns.

Table 10

CIVIL AIRCRAFT PRODUCTION IN THE UNITED STATES

(Number of Aircraft)

Fiscal Year	Air Carrier Transport Aircraft	General Aviation Aircraft	Total
1963	90	7,388	7,478
1964	124	8,944	9,068
1965	189	10,861	11,050
1966	284	14,879	15,163
1967	372	14,799	15,171
1968*	555	14,500	15,055
1969*	555	16,200	16,755
1970*	305	17,800	18,105
1971*	245	19,400	19,645
1972*	230	21,000	21,230
1973*	2	22,600	22,830
1974*	215	24,200	24,415
1979*	280	32,200	32,480

*Forecast.

Note.—Civil aircraft for export are included. Excludes all aircraft produced for military use whether for the United States or for a foreign government.

Table 11

CIVIL AIRCRAFT ENGINE PRODUCTION IN THE UNITED STATES

(Number of Engines)

Fiscal Year	Turbojet	Turboprop	Piston	Total
1963	307	-	10,260	10,567
1964	540	-	12,532	13,072
1965	1,058	52	15,356	16,466
1966	1,840	149	20,407	22,396
1967	2,170	318	18,324	20,812
1968*	2,350	400	19,500	22,250
1969*	2,300	400	21,800	24,500
1970*	1,450	400	24,100	25,950
1971*	1,250	350	26,300	27,900
1972*	1,150	450	28,700	30,300
1973*	1,150	500	30,700	32,350
1974*	1,100	550	32,900	34,550
1979*	1,700	700	43,900	46,300

*Forecast.

Note.—Civil aircraft engines for export are included. Excludes all aircraft engines produced for military use whether for the United States or for a foreign government.

Table 12

TOTAL ITINERANT AND LOCAL AIRCRAFT OPERATIONS
AT AIRPORTS WITH FAA TRAFFIC CONTROL SERVICE

(In millions)

Fiscal Year	Total	Itinerant	Local
1963	29.2	19.7	9.5
1964	32.9	21.6	11.3
1965	35.6	22.9	12.7
1966	41.2	26.0	15.2
1967	47.6	29.2	18.4
1968*	53.1	32.1	21.0
1969*	60.8	36.1	24.7
1970*	67.9	40.3	27.6
1971*	74.9	43.9	31.0
1972*	83.0	48.3	34.7
1973*	92.2	53.2	39.0
1974*	101.9	58.1	43.8
1979*	167.4	88.2	79.2

*Forecast.

Note.—An aircraft operation is defined as an aircraft arrival at or a departure from an airport with FAA traffic control service. A local operation is performed by an aircraft that: operates in the local traffic pattern or within sight of the tower; is known to be departing for or arriving from flight in local practice areas; or executes simulated instrument approaches or low passes at the airport. All aircraft arrivals and departures other than local (as defined above) are classified as itinerant operations.

Table 13

**ITINERANT AIRCRAFT OPERATIONS
AT AIRPORTS WITH FAA TRAFFIC CONTROL SERVICE**

(In millions)

Fiscal Year	Total	Air Carrier	General Aviation	Military
1963	19.7	7.1	10.9	1.7
1964	21.6	7.4	12.4	1.8
1965	22.9	7.5	13.7	1.7
1966	26.0	8.2	16.2	1.6
1967	29.2	8.6	19.0	1.6
1968*	32.1	9.9	20.7	1.5
1969*	36.1	11.2	23.5	1.4
1970*	40.3	12.4	26.5	1.4
1971*	43.9	12.8	29.7	1.4
1972*	48.3	13.8	33.2	1.3
1973*	53.2	14.9	37.0	1.3
1974*	58.1	15.7	41.1	1.3
1979*	88.2	20.6	66.5	1.1

*Forecast

Note.—See Table 12 for definition of itinerant operations.

Table 14

LOCAL AIRCRAFT OPERATIONS
AT AIRPORTS WITH FAA TRAFFIC CONTROL SERVICE

(In millions)

Fiscal Year	Total	General Aviation	Military
1963	9.5	7.5	2.0
1964	11.3	9.3	2.0
1965	12.7	10.8	1.9
1966	15.2	13.5	1.7
1967	18.4	16.7	1.7
1968*	21.0	19.3	1.7
1969*	24.7	23.0	1.7
1970*	27.6	26.0	1.6
1971*	31.0	29.4	1.6
1972*	34.7	33.2	1.5
1973*	39.0	37.5	1.5
1974*	43.8	42.4	1.4
1979*	79.2	78.0	1.2

*Forecast.

Note.—See Table 12 for definition of local operations.

Table 15

INSTRUMENT OPERATIONS AT AIRPORTS
WITH FAA TRAFFIC CONTROL SERVICE

(In millions)

Fiscal Year	Instrument Operations
1963	7.4r
1964	8.4r
1965	9.4r
1966	10.7r
1967	12.1
1968*	14.6
1969*	17.8
1970*	20.0
1971*	21.8
1972*	23.8
1973*	26.0
1974*	27.8
1979*	41.7

*Forecast

r Revised Series

Note.—An instrument operation is defined as the handling by an FAA terminal traffic control facility of the arrival or departure at an airport of an aircraft on an EFR flight plan or the provision of IFR separation to other aircraft by an FAA terminal traffic control facility.

Includes instrument operations at FAA-operated military radar approach control facilities.

Table 16
AIRCRAFT HANDLED, IFR DEPARTURES, AND OVERS BY USER CATEGORY
FAA AIR ROUTE TRAFFIC CONTROL CENTERS
(In millions)

Fiscal Year	Total			Air Carrier			General Aviation			Military		
	Aircraft Handled	IFR Departures	Overs	Aircraft Handled	IFR Departures	Overs	Aircraft Handled	IFR Departures	Overs	Aircraft Handled	IFR Departures	Overs
1963	10.2	3.6	2.9	5.3	2.1	1.2	.9	.4	.2	3.9	1.2	1.6
1964	11.1	4.0	3.1	5.7	2.2	1.2	1.0	.4	.2	4.4	1.4	1.7
1965	12.2	4.6	3.0	6.3	2.5	1.3	1.3	.6	.2	4.6	1.5	1.6
1966	13.5	5.2	3.1	7.4	3.0	1.5	1.7	.7	.2	4.4	1.5	1.4
1967	15.1	5.8	3.4	8.5	3.4	1.7	2.2	1.0	.3	4.3	1.5	1.4
1968*	17.8	7.0	3.8	10.5	4.2	2.1	2.7	1.2	.3	4.6	1.6	1.4
1969*	21.2	8.5	4.2	12.5	5.0	2.5	3.4	1.5	.4	5.3	2.0	1.3
1970*	23.5	9.5	4.5	14.2	5.7	2.8	4.0	1.8	.4	5.3	2.0	1.3
1971*	25.4	10.3	4.8	15.5	6.2	3.1	4.7	2.1	.5	5.2	2.0	1.2
1972*	27.6	11.2	5.2	17.2	6.9	3.4	5.4	2.4	.6	5.0	1.9	1.2
1973*	29.9	12.2	5.5	18.7	7.5	3.7	6.2	2.8	.6	5.0	1.9	1.2
1974*	31.8	13.0	5.8	19.7	7.9	3.9	7.1	3.2	.7	5.0	1.9	1.2
1979*	44.9	18.7	7.5	25.7	10.3	5.1	14.7	6.7	1.3	4.5	1.7	1.1

*Forecast.

Note.—Detail may not add to total due to independent rounding. The aircraft handled count consists of the number of IFR departures multiplied by two plus the number of overs. This concept recognizes that for each departure there is a landing. An IFR departure is defined as an original IFR flight plan filed either prior to departure or after becoming airborne. An over flight originates outside the ARTC area and passes through the area without landing. The forecast data assume present operating rules and procedures and the present number of air route traffic control centers.

Table 17

FLIGHT SERVICES, PILOT BRIEFS, FLIGHT CONDITION MESSAGES
AND FLIGHT PLANS ORIGINATED
FAA FLIGHT SERVICE STATIONS AND COMBINED STATION/TOWERS

(In millions)

Fiscal Year	Flight Services	Pilot Briefs and Flight Condition Messages	Flight Plans Originated		
			Total	IFR-DVFR	VFR
1963	19.3	2.4	3.6	1.7	1.9
1964	21.4	2.9	3.9	2.0	1.9
1965	24.5	4.1	4.1	2.1	2.0
1966	29.1	5.8	4.4	2.3	2.1
1967	34.0	7.5	4.8	2.4	2.4
1968*	38.6	9.1	5.2	2.7	2.5
1969*	43.2	10.6	5.7	3.0	2.7
1970*	48.2	12.2	6.2	3.2	3.0
1971*	53.0	13.7	6.7	3.5	3.2
1972*	57.9	15.2	7.2	3.7	3.5
1973*	63.0	16.7	7.8	4.1	3.7
1974*	68.6	18.2	8.4	4.4	4.0
1979*	97.5	26.0	12.0	6.2	5.8

*Forecast.

Note.—Flight Services is a weighted workload measurement used in Airway Planning Standard No. 5 (the ATS Staffing Standard). The work units reported by each FSS and CS/T which make up this measurement are aircraft contacted, flight plans originated, pilot briefs and flight condition messages. A flight plan may be filed orally or in writing to qualify for inclusion in the activity count shown here.

Table 18

AIRCRAFT CONTACTED
FAA FLIGHT SERVICE STATIONS AND COMBINED STATION/TOWERS

(In millions)

Fiscal Year	Total	IFR-DVFR	VFR	Air Carrier	General Aviation	Military
1963	7.4	.9	6.5	.7	5.5	1.2
1964	7.7	.8	6.9	.7	6.0	1.0
1965	8.1	.9	7.2	.7	6.5	.9
1966	8.6	.9	7.7	.7	7.1	.8
1967	9.3	1.0	8.3	.7	7.9	.7
1968*	10.0	1.1	8.9	.7	8.6	.7
1969*	10.6	1.2	9.4	.7	9.3	.6
1970*	11.4	1.3	10.1	.7	10.1	.6
1971*	12.2	1.4	10.8	.7	10.9	.6
1972*	13.1	1.5	11.6	.7	11.8	.6
1973*	14.0	1.7	12.3	.8	12.7	.5
1974*	15.0	1.9	13.1	.8	13.7	.5
1979*	20.5	2.9	17.6	.9	19.1	.5

*Forecast.

Note.—Aircraft contacted represent a record of the number of aircraft with which FAA facilities (FSS, CS/T) have established radio communications contact. One count is made for each en route, landing or departing aircraft contacted by a facility, regardless of the number of contacts made with an individual aircraft. A flight involving contacts with five different facilities, disregarding the number of contacts with each, would be counted as five aircraft contacted. The data forecast in this table are based upon the current number and configuration of the FSS and CS/T. Any change in their number or operation would have a corresponding change in the forecast.